What is claimed is:

1. A purification apparatus comprising:

a wand comprising a cap, a sample collection assembly and an elongated shaft connecting said cap to said sample collection assembly, said sample collection assembly having microstructures for increasing the surface area of the sample collection assembly; and

a reservoir tube having a lip defining an opening, wherein said cap securely and sealingly fastens to said lip of said reservoir tube with said shaft and said sample collection assembly inside said reservoir tube.

2. The purification apparatus of claim 1, wherein said microstructures are selected from the group consisting of cross-etched lanes, dimples, pillars and pores.

3. The purification apparatus of claim 1, wherein said sample collection assembly comprises a main body having one or more flanges, wherein said microstructures are on an outer surface thereof for binding target molecules.

4. The purification apparatus of claim 3, wherein said microstructures are selected from the group consisting of cross-etched lanes, dimples, pillars and pores.

5. The purification apparatus of claim 1, wherein said sample collection assembly comprises a main body having an outer surface, wherein said microstructures are on said outer surface for binding target molecules.

6. The purification apparatus of claim 1, wherein said sample collection assembly comprises a mesh outer surface and wherein said microstructures comprise microparticles enclosed within said mesh outer surface.

7. The purification apparatus of claim 1, wherein said sample collection assembly comprises a main body, wherein said main body has a striated outer surface.

8. The purification apparatus of claim 1, wherein said sample collection assembly is coated with oligonucleotide probes or specific proteins or cell receptors to capture specific target molecules, cells or microorganisms.

9. The purification apparatus of claim 1, where said sample collection assembly is coated with gold, platinum or other material to enhance electrical or electrochemical conductivity.

10. The purification apparatus of claim 1, wherein said sample collection assembly is coated with a material that binds non-specifically with nucleic acids or proteins.

11. The purification apparatus of claim 1, wherein said sample collection assembly comprises a material that binds non-specifically with nucleic acids or proteins.

12. The purification apparatus of claim 1, wherein said sample collection assembly is made of or coated with a material comprising silicon oxide, aluminum oxide.

13. The purification apparatus of claim 1, wherein said cap is a screw-on cap.

14. The purification apparatus of claim 1, wherein said cap is a snap-on cap.

15. The purification apparatus of claim 14, wherein said cap further comprises a tab for removal of said snap-on cap from said reservoir tube.

16. The purification apparatus of claim 14, wherein said snap-on cap has a stopper lip.

17. The purification apparatus of claim 1, wherein said reservoir tube comprises an elongated body having a lip defining an opening at a first end and a cone or cylindrical shaped second end.

18. The purification apparatus of claim 1, wherein said wand further comprises a heating unit associated with said wand for heating the sample collection assembly.

19. The purification apparatus of claim 1, wherein said wand further comprises a sensing unit associated with said wand for sensing electrical or electrochemical signals through said sample collection assembly.

20. The purification apparatus of claim 1, wherein said reservoir has associated therewith a detecting unit comprising an optical device or spectrometer.

21. A purification kit comprising:

packaged in association together,

a wand comprising a cap, a sample collection assembly and an elongated shaft connecting said cap to said sample collection assembly, said sample collection assembly having a surface containing microstructures for increasing the surface area of the sample collection assembly; and

a plurality of reservoir tubes or microtiter plate modules wherein each of said reservoir tube or module has a lip defining an opening, wherein said cap securely and sealingly fastens to a said lips of said reservoir tubes or modules with said shaft and said sample collection assembly inside said reservoir tube or module.

22. The purification kit of claim 21, wherein said microstructures are selected from the group consisting of cross-etched lanes, dimples, pillars and pores.

23. The purification kit of claim 21, wherein said sample collection assembly comprises a main body having an outer surface, wherein said microstructures are on said outer surface for binding target molecules.

24. The purification kit of claim 21, wherein said sample collection assembly comprises a main body having one or more flanges associated therewith, wherein said flanges have microstructures on an outer surface thereof for binding target molecules.

25. The purification kit of claim 24, wherein said microstructures are selected from the group consisting of cross-etched lanes, dimples, pillars and pores.

26. The purification kit of claim 21, wherein said sample collection assembly comprises a mesh outer surface with microparticles enclosed within said mesh outer surface.

27. The purification kit of claim 21, wherein said sample collection assembly is coated with oligonucleotide probes or specific proteins to capture specific target molecules.

28. The purification kit of claim 21, wherein said sample collection assembly is coated with a material that binds non-specifically with nucleic acids or proteins or coated with material to enhance electrical or electrochemical conductivity.

29. The purification kit of claim 21, wherein said sample collection assembly comprises a material that binds non-specifically with nucleic acids or proteins.

30. The purification kit if claim 29, wherein said material is silicon oxide or aluminum oxide.

31. A method of DNA or RNA purification comprising:

placing a DNA or RNA containing sample and a denaturing solution in a first reservoir tube,

inserting a wand into said first reservoir tube, wherein said wand comprises a cap, a sample collection assembly and an elongated shaft connecting said cap to said sample

collection assembly, said sample collection assembly having microstructures for increasing the surface area of the sample collection assembly;

securely and sealingly closing said first reservoir tube with said cap of said wand with said shaft and said sample collection assembly inside said first reservoir tube;

agitating said first reservoir tube to mix said sample with said denaturing solution, thereby binding said DNA or said RNA to said sample collection assembly;

removing said wand from said first reservoir tube and inserting said wand into a second reservoir tube; said second reservoir tube containing a wash buffer;

securely and sealingly closing said second reservoir tube with said cap of said wand with said shaft and said sample collection assembly inside said second reservoir tube;

agitating said second reservoir tube to mix said sample with said wash buffer;

removing said wand from said second reservoir tube and inserting said wand into a third reservoir tube; said third reservoir tube containing an elution buffer;

incubating said third reservoir tube; and

recovering purified DNA or RNA from said third reservoir tube.

32. The method of claim 31, wherein said sample capture assembly comprises a main body having one or more flanges for binding target molecules.

33. The method of claim 32, wherein said flanges further comprises an outer surface having microstructures selected from the group consisting of cross-etched lanes, dimples, pillars and pores.

34. The method of claim 31, wherein said sample collection assembly comprises outer surface having said microstructures, wherein said microstructures are selected from the group consisting of cross-etched lanes, dimples, pillars and pores.

35. The method of claim 31, wherein said sample collection assembly comprises a a mesh outer surface with microparticles enclosed within said mesh outer surface.

36. The method of claim 31, wherein said sample collection assembly is coated with singular or dendritic oligonucleotide or peptide probes to capture specific target molecules.

37. The purification kit of claim 31, wherein said sample collection assembly comprises a material that binds non-specifically with nucleic acids or proteins.

38. The method of claim 31, wherein said sample collection assembly is coated with a material that binds non-specifically with nucleic acids or proteins.

39. The method of claim 38, wherein said material is silicon oxide or aluminum oxide.

40. A method of antigen capture from a sample comprising:

a) placing said sample and a denaturing solution in a first reservoir tube,

b) inserting a wand into said first reservoir tube, wherein said wand comprises a cap, a sample collection assembly coated with an antigen specific antibody and an elongated shaft connecting said cap to said sample collection assembly, wherein said sample collection assembly comprises microstructures for increasing the surface area thereof;

c) securely and sealingly closing said first reservoir tube with said cap of said wand with said shaft and said sample collection assembly inside said first reservoir tube;

d) agitating said first reservoir tube to mix said sample with said denaturing solution, thereby binding said antigen to said sample collection assembly;

e) removing said wand from said first reservoir tube and inserting said wand into a second reservoir tube; said second reservoir tube containing a blocking buffer;

f) securely and sealingly closing said second reservoir tube with said cap of said wand with said shaft and said sample collection assembly inside said second reservoir tube;

g) agitating said second reservoir tube to mix said sample with said blocking buffer;

h) removing said wand from said second reservoir tube and inserting said wand into a third reservoir tube; said third reservoir tube containing a conjugate solution;

i.) removing said wand from said third reservoir tube and inserting said wand into a forth reservoir tube; said forth reservoir tube containing a wash buffer and washing several times;

j) capturing said antigen on said coating of said capture assembly.

41. The method of claim 40, further comprising removing said wand from said forth reservoir tube and inserting in a fifth reservoir tube; said fifth reservoir tube containing a detection agent; and

detecting said antigen by a method selected from the group consisting of colorimetric, fluorescent, luminescent and electrochemical methods.

42. The method of claim 40, wherein said microstructures are selected from the group consisting of cross-etched lanes, dimples, pillars and pores.

43. The method of claim 40, wherein said sample collection assembly comprises a main body having an outer surface, wherein said microstructures are on said outer surface for binding target molecules.

44. The method of claim 40, wherein said sample collection assembly comprises a main body having one or more flanges associated therewith, wherein said flanges have microstructures on an outer surface thereof for binding target molecules.

45. The method of claim 44, wherein said microstructures are selected from the group consisting of cross-etched lanes, dimples, pillars and pores.

46. The method of claim 40, wherein said sample collection assembly comprises a mesh outer surface with microparticles enclosed within said mesh outer surface.

47. The method of claim 40, wherein said sample collection assembly is coated with singular or dendritic oligonucleotide, peptide probes or cell receptors to capture specific target molecules.

48. The method of claim 40, wherein said sample collection assembly is coated with a material that binds non-specifically with nucleic acids or proteins.

49. The purification apparatus of claim 40, wherein said sample collection assembly comprises a material that binds non-specifically with nucleic acids or proteins.

50. The purification apparatus if claim 48, wherein said material is made of silicon oxide, aluminum oxide, or other compounds with similar nucleic acids and protein adsorptive properties.

51. A method of antibody capture from a sample comprising:

a) placing said sample and a denaturing solution in a first reservoir tube,

b) inserting a wand into said first reservoir tube, wherein said wand comprises a cap, a sample collection assembly coated with specific antigen and an elongated shaft connecting said cap to said sample collection assembly, wherein said sample collection assembly comprises microstructures for increasing surface area thereof;

c) securely and sealingly closing said first reservoir tube with said cap of said wand with said shaft and said sample collection assembly inside said first reservoir tube;

d) agitating said first reservoir tube to mix said sample with said denaturing solution, thereby binding said antibody to said sample collection assembly;

e) removing said wand from said first reservoir tube and inserting said wand into a second reservoir tube; said second reservoir tube containing a blocking buffer;

f) securely and sealingly closing said second reservoir tube with said cap of said wand with said sample collection assembly inside said second reservoir tube;

g) agitating said second reservoir tube to mix said sample with said blocking buffer;

h) removing said wand from said second reservoir tube and inserting said wand into a third reservoir tube; said third reservoir tube containing a conjugate solution;

i) removing said wand from said third reservoir tube and inserting said wand into a forth reservoir tube; said forth reservoir tube containing a wash buffer and washing several times; and

j) capturing said antibody on said coating of said capture assembly.

52. The method of claim 51, further comprising removing said wand from said forth reservoir tube and inserting it into a fifth reservoir tube; said fifth reservoir tube containing a detection agent; and

detecting said antibody by fluorescent, colorimetric, luminescent or electrochemical methods.

53. The method of claim 51, wherein said microstructures are selected from the group consisting of cross-etched lanes, dimples, pillars and pores.

54. The method of claim 51, wherein said sample collection assembly comprises a main body having an outer surface, wherein said microstructures are on said outer surface for binding target molecules.

55. The method of claim 51, wherein said sample collection assembly comprises a main body having one or more flanges associated therewith, wherein said flanges have microstructures on an outer surface thereof for binding target molecules.

56. The method of claim 55, wherein said microstructures are selected from the group consisting of cross-etched lanes, dimples, pillars and pores.

57. The method of claim 51, wherein said sample collection assembly comprises a mesh outer surface with microparticles enclosed within said mesh outer surface.

58. The method of claim 51, wherein said sample collection assembly is coated with oligonucleotide probes or specific proteins to capture specific target molecules.

59. The method of claim 51, wherein said sample collection assembly is coated with a material that binds non-specifically with nucleic acids or proteins.

60. The method of claim 51, wherein said sample collection assembly comprises a material that binds non-specifically with nucleic acids or proteins.

61. The method of claim 59, wherein said material is silicon oxide or aluminum oxide.

62. A purification wand for fitting into a plastic tube or microtiter plate module comprising:

a sample collection assembly and an elongated shaft connecting said cap to said sample collection assembly, said sample collection assembly having microstructures for increasing the surface area of the sample collection assembly.

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